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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,882	06/25/2001	David K. Mesecher	1-2-105.1US	1182

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EXAMINER	
LY, NGHI H	

ART UNIT	PAPER NUMBER
2686	

DATE MAILED: 07/29/2004 4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/888,882	MESECHER ET AL.	
	Examiner	Art Unit	
	Nghi H. Ly	2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-8 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,2,4 and 7 is/are rejected.

7)☒ Claim(s) 3,5,6 and 8 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130 (b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1 and 7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of Mesecher et al U.S. Patent No. 6,289,004. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Regarding claim 1, Mesecher teaches an interference cancellation system for use in conjunction with a base station having a main antenna for receiving signals from a plurality of remote users (see column 10, lines 24-27), wherein at least one interference source is known (see column 10, lines 24-27), the system comprising: at least one directional antenna directed toward said at least one interference source (see column 10, lines 28-33), said antenna having a plurality of coplanar feeds that are located one quarter to one half wavelength apart from each other (see column 10, lines

28-33), each coplanar feed for receiving an RF signal; means for weighting said RF signals received by said plurality of coplanar feeds to produce a cancellation signal (see column 10, lines 28-33), first summing means for summing said weighted signals using a least mean square (LMS) algorithm (see column 10, lines 41-45), and second summing means for summing said cancellation signal with signals received from said main antenna (see column 10, lines 46-48) to produce an output signal substantially free from interference (see column 10, lines 34-38).

Regarding claim 7, Mesecher teaches a method for interference cancellation for use in conjunction with a base station having a main antenna for receiving signals from a plurality of remote users (see column 10, lines 24-27), wherein at least one interference source is known (see column 10, lines 24-27), comprising the steps of: directing at least one directional antenna toward said at least one interference source (see column 10, lines 28-33), each directional antenna having a plurality coplanar feeds that are located one quarter to one half wavelength apart from each other (see column 10, lines 28-33), each coplanar feed for receiving an RF signal (see column 10, lines 39-41), and canceling an interference signal generated by said at least one known interference source (see column 10, lines 34-38).

3. Claim 2 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of Mesecher et al U.S. Patent No. 6,289,004 in view of Tiedemann et al, Jr. et al (US 5,914,950).

Regarding claim 2, Mesecher teaches weighting in claim 1 (see column 10, lines 41-44).

Mesecher does not specifically disclose the weighting is performed using a predetermined factor alpha.

Tiedemann teaches disclose the weighting is performed using a predetermined factor alpha (see column 34, lines 21-22 and column 33, line 58 to column 34, lines 13).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to provide the above teaching of Tiedemann into the system Mesecher in order to provide a method and apparatus for high speed data transmission scheduling (see Tiedemann, column 4, lines 39-40).

4. Claim 4 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of Mesecher et al U.S. Patent No. 6,289,004 in view of Nowara (US 5,974,087).

Regarding claim 4, Mesecher teaches an RF receiver (see column 10, lines 39-41).

Mesecher does not specifically disclose the output signal is demodulated by an RF receiver to produce a baseband signal, said receiver being coupled to a plurality of modems for phase correction of said baseband signal.

Nowara teaches the output signal is demodulated by an RF receiver to produce a baseband signal, said receiver being coupled to a plurality of modems for phase

correction of said baseband signal (see fig.2, connection between boxes 11 and 23, and see column 4, lines 23-27).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to provide the above teaching of Nowara into the system Mesecher in order to provide a waveform quality measuring method and apparatus which permit high precision, fast measurement of the waveform quality (see Nowara, column 1, lines 64-67).

Allowable Subject Matter

5. Claim 3, 5, 6 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 3, Mesecher teaches the system of claim 2. Mesecher fails to teach each said user is located within the narrow beam path of the directional antenna, and each antenna gain of remote user communicating with said base station is greater than 1/(1-alpha) relative to the main antenna.

Regarding claim 5, Mesecher teaches the system of claim 4. Mesecher fails to teach each of said modems comprises: means for producing a digital signal by quantizing the baseband signal, said digital signal comprising a data signal and a pilot signal; means for deriving filter coefficients based on phase error due to RF carrier offset of the data signal; means for compensating for channel distortion due to multipath

effects; means for determining bit error rate; and means for automatic power control responsive to the bit error rate.

Regarding claim 6, Mesecher teaches the system of claim 4. Mesecher fails to teach each said modem comprises: an A/D converter coupled to a tracker; a vector correlator coupled to the output of the A/D converter; a carrier recovery phase-locked loop unit coupled to the vector correlator for producing filter coefficients in conjunction with the vector correlator; an adaptive matched filter (AMF) with an input coupled to the A/D converter and the vector correlator and an output coupled to the tracker; a plurality of channel despreaders coupled to the AMF output; a Viterbi decoder coupled to the output of said plurality of channel despreaders; and an automatic power control (APC) unit coupled to the Viterbi decoder.

Regarding claim 8, Mesecher teaches the canceling step (see column 10, lines 24-27) comprises: weighting the RF signals received by said coplanar feeds (see column 10, lines 24-48), summing the weighted signals using a least mean square (LMS) algorithm to produce a cancellation signal (see column 10, lines 41-45), summing the cancellation signal with signals received from the main antenna to produce an output signal substantially free from interference (see column 10, lines 46-48 and see column 10, lines 34-38).

Mesecher fail to teach comparing feedback from the output signal to the weighted signal until steady state is achieved.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Dent (US 5,377,183) teaches calling channel in CDMA communications system.

b. Rashid-Farrokhi (US 6,304,750) teaches space-time diversity receiver for wirelss system.

c. Swaminathan (US 5,630,016) teaches comfort noise generation for digital communication system.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi H. Ly whose telephone number is (703) 605-5164. The examiner can normally be reached on 8:30 am-5:30 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nghi H. Ly

07/25/04

CHARLES APPIAH
PRIMARY EXAMINER